

**What is Claimed:**

1. An on-demand fulfillment system for the customized production of products, the production of which comprises a multi-step manufacturing process, the on-demand fulfillment system comprising:

a plurality of manufacturing means, each adapted to automatically implement a step in a multi-step manufacturing process;

means for receiving product order data from a customer to define a product;

means, responsive to said received product order data, for automatically defining a multi-step manufacturing process to produce said defined product; and

means for automatically activating, in a sequence defined by said multi-step manufacturing process, ones of said plurality of manufacturing means to implement said defined multi-step manufacturing process.

2. The on-demand fulfillment system of claim 1 further comprising:

means connected to and interconnecting at least two of said manufacturing means for transporting a partially completed defined product from a first of said at least two of said manufacturing means to a second of said at least two of said manufacturing means.

3. The on-demand fulfillment system of claim 1 further comprising:

means for interconnecting said plurality of manufacturing means to transport, in a predetermined order, a partially completed defined product to each of said interconnected plurality of manufacturing means.

4. The on-demand fulfillment system of claim 3 wherein said means for defining comprises:

means, responsive to said received product order data, for identifying a plurality of said manufacturing means required to produce said defined product;

means for defining an operation to be performed by each of said identified plurality of said manufacturing means; and

means for generating a set of data that defines both said identified plurality of manufacturing means and an operation to be performed by each of said identified plurality of manufacturing means.

5. The on-demand fulfillment system of claim 4 wherein said means for activating comprises:

means, responsive to said generated set of data, for enabling each of said identified plurality of manufacturing means in sequence to perform said identified operation on a partially completed product as said partially completed product is transported by said means for transporting to each of said plurality of manufacturing means in said predetermined order.

6. The on-demand fulfillment system of claim 3 wherein said plurality of social expression product manufacturing means comprises:

means for feeding at least one piece of raw material to said means for transporting.

7. The on-demand fulfillment system of claim 6 wherein said plurality of social expression product manufacturing means further comprises:

means for registering said at least one piece of raw material on said means for transporting to enable successive ones of said plurality of manufacturing means to operate on said at least one piece of raw material located in a precise orientation on said means for transporting.

8. The on-demand fulfillment system of claim 7 wherein said plurality of social expression product manufacturing means further comprises at least two of: a printer, an emboss apparatus, a scoring apparatus, stock cutting apparatus, stock folding apparatus.

9. The on-demand fulfillment system of claim 3 wherein said plurality of manufacturing means comprises:

stack means for receiving and aggregating a predetermined plurality of manufactured social expression products.

10. The on-demand fulfillment system of claim 9 wherein said plurality of manufacturing means comprises:

packaging means for wrapping said predetermined plurality of manufactured social

expression products into an integral package for delivery to a customer.

11. The on-demand fulfillment system of claim 1 wherein said means for receiving product order data comprises:

means for interfacing with a communication medium consisting of a one of the class of communication media including: IP network, Public Switched Telephone Network, cellular network.

12. The on-demand fulfillment system of claim 11 wherein said means for receiving product order data further comprises:

means for providing said customer with a plurality of data entry options to enable said customer to select and customize said product.

13. The on-demand fulfillment system of claim 11 wherein said means for receiving product order data further comprises:

means for receiving a pre-processed data file from a computer system that defines, at least in part, a multi-step manufacturing process to produce said defined product

14. The on-demand fulfillment system of claim 1 wherein said means for automatically defining comprises:

means, responsive to said received product order data, for generating a plurality of data files to control the operation of ones of said plurality of manufacturing means to implement said defined multi-step manufacturing process.

15. The on-demand fulfillment system of claim 14 wherein said means for automatically activating comprises:

means, responsive to said plurality of data files, for activating selected ones of said plurality of manufacturing means with a corresponding one of said plurality of data files to implement said defined multi-step manufacturing process.

16. An on-demand fulfillment system for the customized production of social expression products, the production of which comprises a multi-step manufacturing process,

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the on-demand fulfillment system comprising:

a plurality of social expression product manufacturing means, each adapted to automatically implement a step in a multi-step social expression product manufacturing process;

data interface means for receiving social expression product order data from a customer to define a social expression product;

process setup means, responsive to said received social expression product order data, for automatically defining a multi-step social expression product manufacturing process to produce said defined social expression product; and

process management means for automatically activating, in a sequence defined by said multi-step social expression product manufacturing process, ones of said plurality of social expression product manufacturing means to implement said defined multi-step social expression product manufacturing process.

17. The on-demand fulfillment system of claim 16 wherein said process setup means comprises:

social expression product component definition means, responsive to said received social expression product order data, for identifying a plurality of said social expression product manufacturing means required to produce said defined social expression product;

process step means for defining an operation to be performed by each of said identified plurality of said social expression product manufacturing means; and

control data generating means for generating a set of manufacturing apparatus control data that defines said identified plurality of social expression product manufacturing means, an operation to be performed by each of said identified plurality of social expression product manufacturing means, and a sequence of said operations to manufacture said social expression product.

18. The on-demand fulfillment system of claim 17 further comprising:

transport means for interconnecting said plurality of manufacturing means to transport, in a predetermined order, a partially completed defined product to each of said interconnected plurality of social expression product manufacturing means.

19. The on-demand fulfillment system of claim 18 wherein said plurality of social expression product manufacturing means comprises:

stock feed means for feeding at least one piece of printable stock to said transport means.

20. The on-demand fulfillment system of claim 19 wherein said plurality of social expression product manufacturing means further comprises:

stock registration means for registering said at least one piece of printable stock on said transport means to enable successive ones of said plurality of social expression product manufacturing means to operate on said at least one piece of printable stock located in a precise orientation on said transport means.

21. The on-demand fulfillment system of claim 20 wherein said process management means comprises:

means, responsive to said generated set of manufacturing apparatus control data, for enabling each of said identified plurality of social expression product manufacturing means in sequence to perform said identified operation on a partially completed social expression product as said partially completed social expression product is transported by said transport means to each of said plurality of social expression product manufacturing means in said predetermined order.

22. The on-demand fulfillment system of claim 21 wherein said plurality of social expression product manufacturing means further comprises at least two of:

printer means for printing customer selected content on said precisely oriented printable stock;

emboss means for embossing said precisely oriented printable stock;

printable stock scoring means for scoring said precisely oriented printable stock; and

fold means for folding said scored precisely oriented printable stock.

23. The on-demand fulfillment system of claim 22 wherein said plurality of social expression product manufacturing means comprises:

stack means for accumulating a plurality of said social expression product into a

configuration for packaging.

24. The on-demand fulfillment system of claim 23 wherein said plurality of social expression product manufacturing means comprises:

packaging means for wrapping said stacked plurality of said social expression product for shipment to said customer.

25. The on-demand fulfillment system of claim 16 wherein said data interface means comprises:

communication network interface means for interconnecting with a communication medium consisting of a one of the class of communication media including: IP network, Public Switched Telephone Network, cellular network.

26. The on-demand fulfillment system of claim 25 wherein said data interface means further comprises:

screen display means for providing said customer with a plurality of data entry options to enable said customer to select and customize said product.

27. The on-demand fulfillment system of claim 25 wherein said data interface means further comprises:

file upload means for receiving a pre-processed data file from a computer system that defines, at least in part, a multi-step manufacturing process to produce said defined product

28. The on-demand fulfillment system of claim 16 wherein said process setup means comprises:

process file generation means, responsive to said received product order data, for generating a plurality of data files to control the operation of ones of said plurality of manufacturing means to implement said defined multi-step manufacturing process.

29. The on-demand fulfillment system of claim 28 wherein said process management means comprises:

manufacturing module control means, responsive to said plurality of data files, for

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activating selected ones of said plurality of manufacturing means with a corresponding one of said plurality of data files to implement said defined multi-step manufacturing process.

30. A method of operating an on-demand fulfillment system for the customized production of products, the production of which comprises a multi-step manufacturing process, the on-demand fulfillment system comprising a plurality of manufacturing modules, each adapted to automatically implement a step in a multi-step manufacturing process, the method comprising:

receiving product order data from a customer to define a product;

automatically defining, in response to said received product order data, a multi-step manufacturing process to produce said defined product; and

automatically activating, in a sequence defined by said multi-step manufacturing process, ones of said plurality of manufacturing modules to implement said defined multi-step manufacturing process.

31. The method of operating an on-demand fulfillment system of claim 30 further comprising:

transporting a partially completed defined product from a first of at least two of said manufacturing modules to a second of said at least two of said manufacturing modules.

32. The method of operating an on-demand fulfillment system of claim 30 further comprising:

interconnecting said plurality of manufacturing modules to transport, in a predetermined order, a partially completed defined product to each of said interconnected plurality of manufacturing modules.

33. The method of operating an on-demand fulfillment system of claim 32 wherein said step of defining comprises:

identifying, in response to said received product order data, a plurality of said manufacturing modules required to produce said defined product;

defining an operation to be performed by each of said identified plurality of said manufacturing modules; and

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generating a set of data that defines both said identified plurality of manufacturing means and an operation to be performed by each of said identified plurality of manufacturing modules.

34. The method of operating an on-demand fulfillment system of claim 33 wherein said step of activating comprises:

enabling, in response to said generated set of data, each of said identified plurality of manufacturing modules in sequence to perform said identified operation on a partially completed product as said partially completed product is transported to each of said plurality of manufacturing modules in said predetermined order.

35. The method of operating an on-demand fulfillment system of claim 32 comprising:

feeding at least one piece of raw material to a manufacturing module.

36. The method of operating an on-demand fulfillment system of claim 35 further comprising:

registering said at least one piece of raw material to enable successive ones of said plurality of manufacturing modules to operate on said at least one piece of raw material located in a precise orientation.

37. The method of operating an on-demand fulfillment system of claim 36 further comprising at least two of: printing, embossing, scoring, stock cutting, stock folding.

38. The method of operating an on-demand fulfillment system of claim 32 comprising:

receiving and aggregating a predetermined plurality of manufactured social expression products.

39. The method of operating an on-demand fulfillment system of claim 38 comprising:

wrapping said predetermined plurality of manufactured social expression products



into an integral package for delivery to a customer.

40. The method of operating an on-demand fulfillment system of claim 30 wherein said step of receiving product order data comprises:

interfacing with a communication medium consisting of a one of the class of communication media including: IP network, Public Switched Telephone Network, cellular network.

41. The method of operating an on-demand fulfillment system of claim 40 wherein said step of receiving product order data further comprises:

providing said customer with a plurality of data entry options to enable said customer to select and customize said product.

42. The method of operating an on-demand fulfillment system of claim 40 wherein said step of receiving product order data further comprises:

receiving a pre-processed data file from a computer system that defines, at least in part, a multi-step manufacturing process to produce said defined product

43. The method of operating an on-demand fulfillment system of claim 30 wherein said step of automatically defining comprises:

generating, in response to said received product order data, a plurality of data files to control the operation of ones of said plurality of manufacturing modules to implement said defined multi-step manufacturing process.

44. The method of operating an on-demand fulfillment system of claim 43 wherein said step of automatically activating comprises:

activating, in response to said plurality of data files, selected ones of said plurality of manufacturing modules with a corresponding one of said plurality of data files to implement said defined multi-step manufacturing process.